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A Price Analysis for InWord

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A PRICE ANALYSIS FOR INWORD

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By

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I HEREBY RECOMMEND THAT THE PROJECT PREPARED UNDER MY SUPERVISION BY Adam Jacob Bellin ENTITLED A Price Analysis of a Non-Profit Publishing Company BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIRMENTS FOR THE DEGREE OF Master of Science in Social and Applied Economics.

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ABSTRACT

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InWord, a small non-profit creator and publisher of Bible studies, is funded largely by private donations. While these donations have been quite substantial, InWord wants to use this money as wisely as possible, and try to increase revenues and decrease costs to hopefully move toward a breakeven position. InWord is currently covering all variable costs, but are struggling to pay their fixed costs.

InWord sells two types of studies, a smaller (7 or less units for studying) and a larger study (8 or more) at two different price points ($39 and $49 respectively). In addition, quantity discounts are offered. Using InWord's data on past sales I was able to use regression analysis to create a demand curve for both types of InWord's studies. Based upon these demand curves I was able to determine that InWord was indeed charging a price that is close to the profit maximizing price, and therefore lowers their losses.

The analysis indicates that InWord should focus on lowering costs, and shifting their demand curve. An improved marketing effort could increase demand for InWord's products, but a good marketing survey should be the first step. By increasing operating profits InWord should be able to reduce the dependence on donations.

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I. INTRODUCTION

Background

InWord is a non-denominational, non-profit Bible ministry, founded in 1996 by Barry Shafer. Its goal is to increase biblical literacy among teens, and seeks to do so by "equipping the teens through inductive methods, tools, and materials for personal Bible understanding and for small group settings."[1] As a non-profit, InWord is governed by a board that has control over large decisions, but the day-to-day operations are handled by Mr. Shafer and his single employee.

It was decided during the initial days of InWord that the firm should operate as a non-profit. InWord collected donations instead of investors for two reasons. First, the firm could take advantage of non-profit status to receive tax-exempt status, second, the donor's contributions are tax deductible, and third, because the board felt that it would be hard for InWord to turn a profit. Either way, InWord had donors willing to give the new firm money in order to advance the mission of increasing biblical literacy in teens. Since InWord's goal is to increase biblical literacy, they would like to sell as many studies as possible, and still breakeven. However if they cannot breakeven, they would like to minimize losses, so they can continue their mission.

According to Mr. Shafer, "[InWord's] challenge was to create Bible studies that led the leaders in their personal discovery of Scripture and then provide them a lesson plan that

[1] http://www.inword.org/aboutus/index.html

let students have their personal discovery in the group session." InWord fittingly began with a study on Genesis and now has 22 studies and devotionals.[2] This paper will focus solely on the studies that InWord produces. In a typical year InWord plans to introduce at least two new studies to its catalog, and most are strictly a study of a specific book of the Bible. Each study is comprised of a binder that includes study preparation for the instructor, a lesson plan, and reproducible worksheets for the students. Each church only needs to buy enough studies to provide one for each instructor, and the students' worksheets can be copied out of the binder.

The reproducibility of these studies makes them almost unique in the marketplace. There are only a handful of studies that offer reproducibility, and the studies that do typically offer fewer lessons. Most other reproducible studies offer limited preparation options for instructors, and are priced lower. In this way InWord is differentiating itself from the rest of the market.

InWord relies heavily on word of mouth testimonials and interpersonal relationships to sell its studies. Although they spend on average $2500 per month on advertising, most of the sales go to those churches that have a personal connection with Mr. Shafer in some way or by word-of-mouth referrals. Mr. Shafer is a former recruiter for Anderson University[3] and is currently a part-time pastor for a First Church of God church.

Costs

Most of InWord's costs are fixed and there is very little that can be done to change them. The fixed costs on a monthly basis are approximately $9750. This includes salaries

[2] Studies are done in a group setting and usually last about an hour. Devotionals are usually done individually and the time varies, but is usually under a half hour.
[3] Anderson University is a private liberal arts school affiliated with the First Church of God Anderson, IN.

and benefits for Mr. Shafer and his administrative director. It also includes monthly spending on advertising at a rate of $2500 per month.[4] InWord spends much of its advertising money on ads in catalogs, printing and mailing their own catalog, and travel expenses for Mr. Shafer to exhibit at national conferences. Most sales that come from these activities don't occur for at least one month after the money was spent on the materials to produce the catalogs, or after the conferences. It is important to note that this paper does not evaluate the effectiveness of different types of advertising, and that some types of advertising are probably more significant than others. Finally, the fixed costs include one-time costs of creating the cover design, interior design, and editing of any new studies that are produced during the year. As stated above, typically InWord produces two new titles each year.

The variable costs are surprisingly high for InWord. On average, a copy of each study costs $10.91 to produce.

Description	Cost
Interior Printing	$6.75
Physical Notebook	$2.30
Reference Tabs	$1.00
Cover Printing	$0.86
	$10.91

InWord burns each study on a CD-ROM and as they begin to run low on a study they have a local print shop reproduce the studies in a digital high-speed copy process. Depending upon how many copies of each study InWord anticipates selling, they order between 50 and 75 copies of the interior printing for the study. The notebook binders are typically ordered in quantities of 500 because InWord receives a price break at that quantity, and all binders are interchangeable. They are special notebooks, in that they allow InWord to

[4] $2500 is the average amount spent on advertising per month over the past 3 years. This is a variable cost, but since InWord does not vary their advertising budget by the amount of their sales, advertising cost will be treated as a fixed cost for simplicity reasons.

entrap the cover and spine in the plastic of the notebook cover The reference tabs are custom printed for InWord's needs. Those are typically purchased in lots of 1000. Finally the cover art is different for each study, and is in color, whereas the rest of the content is produced in black and white. InWord buys these in lots of 500 for each different study.

The reason for using the binder system is two-fold. First, it makes reproduction of the individual pages much easier for the end user. All they have to do is open the binder, unload the sheets to be copied, and reinsert them. Second, the use of binders helps to differentiate InWord. The binder stands neatly on a self, with the binding clearly stating the name of the study. All binders are the same size and create a visually appealing look on the shelf. Most other studies are thin workbooks that are hard to find on a crowded bookshelf, and are easily forgotten. The goal is to have the user see the binder and remember the experience they had with InWord studies, and hopefully purchase the next study in the series.

After 10 years of existence, the firm is still not covering the bulk of its variable costs, and is depleting donated money quickly.

Price concerns

At the founding of InWord, the board decided that the larger-sized studies, those with eight or more lessons, would be priced at $49, and the smaller studies, those with seven or fewer lessons, would be priced at $39. There was no demand-based reason for choosing those prices, but rather the group just tried to charge a rate for the studies based upon development costs. They also decided that it would be better to start at a high price and lower prices later if needed, or to offer discounts for the studies. InWord has not changed any of its prices, but does offer quantity discounts. For youth groups with more than one study group InWord offers additional copies of the same study for $19 each.

As described earlier the problem of not making enough revenue to cover the non-profit's costs could become a problem if they begin to run out of donated money. Mr. Shafer's concern is whether or not InWord is charging an appropriate price for their studies, and if lowering the prices of their studies would help to increase revenues and reduce losses, or if that would just exacerbate the problem. Secondarily, and a question out of the scope of this paper, is whether InWord has positioned itself in a market segment that has very few potential buyers, and the firm will never be able to break even.

InWord needs both a price and marketing analysis conducted on the firm. This paper will only focus on the price analysis, but will make some marketing suggestions later in the final section.

II. THE BIBLE STUDY MARKET

Unfortunately there is no literature that is freely available that analyzes demand for the publishing industry or the factors that affect demand. Nonetheless any principles of a microeconomics textbook will list demand as being a function of the price the firm is charging, consumer tastes and preferences (which can be affected by marketing and can change over time), consumer's income, prices of substitutes, availability of substitutes, complementary products, and the time frame in which they need the product. InWord is subject to each one of these demand factors in differing degrees.

The publishing industry for biblical studies is proprietary by nature and not much data is available. There are approximately 300,000 churches and about 90 different denominations in the United Sates.[5] Seven of the denominations have over 10,000 churches alone in the U.S. InWord's mailing list includes only about 5,000 of the 300,000 churches in the U.S, and does not include many churches from the major denominations on their mailing list. Many of the major denominations recommend that their churches follow a certain curriculum, but youth ministers are usually free to choose the type of material they would like to teach.

For religious education churches typically use one of two types of calendars. They will sometimes use a seasonal calendar (winter, spring, summer and fall) but often their children's departments will use the school year calendar starting in September, on a quarterly

[5] TRI Media profile report prepared for InWord

basis. This means that most youth leaders are making purchase decisions just before the start of a new quarter.

There are thousands of Bible studies available with most ranging in price from $4 to $30. Most Bible studies have booklets that must be purchased for each student and the students fill in the answers as the instructor leads. Some studies allow the youth leader to buy one copy of the study and make as many copies of as many pages as the group needs.

Most studies are very simple and need no preparation outside of class; the instructor simply reads the instructions on the page as the class progresses. Some studies require preparation before the beginning of the class in order for the instructor to be well prepared for the meeting time. This typically includes more of the background on stories being discussed in class so that the instructor will be more prepared for questions not specifically addressed in the study. It also may include special soul searching exercises to prepare the leader spiritually.

Many studies are produced and distributed by the major denominations and by very large churches which do have the ability to underwrite a lot of the cost associated with their products. Many churches and denominations do this to get their Bible study to as many people as possible at as low a cost as possible. If costs are diminished, more studies can be created, and the hope is that everyone who wants to do a particular Bible study will be able to do it. Donors give to InWord mainly because the donors appreciate the Bible studies being produced and want it in the hands of as many people as possible.

The Bible study market is monopolistically competitive in its make-up, meaning that there are plenty of Bible studies to choose from, but almost all studies are different from each other. The only way to make a Bible study stand out in the crowd is by being different.

InWord has positioned itself in the reproducible, heavy preparation, in-depth coverage, and high priced market segment. Few if any studies are positioned there.

Estimation Methodology

I have chosen to estimate two models for InWord, one for the larger studies and one for the smaller studies. These models will use InWord's monthly sales of the two price classes of Bible studies as the dependent variable. The first independent variable is the real price that InWord is charging for its studies. I expect that the price coefficient will be negative because of the law of demand, that at higher prices customers demand less of an item than at lower prices. I will use real price because over the past 5 years the general price level in the U.S. has increased 10%, but InWord has not changed its prices at all during that time. Using the real price will give a greater range of prices that InWord has effectively charged, as well as allowing the model to more accurately estimate the effects caused by changes in the price.

Advertising should positively affect sales. The more money and effort spent on advertising the greater the response should be for InWord's Bible studies. By buying more ads in magazines more potential customers will see the ad, and a higher level of sales should result. It is always difficult to show a one-to-one relationship between the amount spent on advertising and its resulting sales, but with the regression analysis it is possible to achieve a certain level of confidence that X dollar increase in advertising spending leads to a Y unit increase in sales.

The number of studies that InWord has available will capture a few effects. First, the total studies variable will capture a certain built-up level of awareness of the InWord studies. This is because advertising, previous sales, and word of mouth has a cumulative effect. The

reason this effect is not captured by the advertising variable is because that variable changes monthly. It will increase and decrease based upon the advertising effort for that month. The total studies variable has only increased over time and will continue to increase over time. The same thing also is happening with the level of awareness of InWord's studies. Each year, more people become aware of InWord and their studies. This is the only variable in the model that will capture this effect. Along with the awareness factor there is a level of market penetration that is also being captured by this variable. The second effect is that with the greater selection, churches can purchase the exact study for their needs. Finally, this greater number of studies is providing churches with an added value of consistently using the same publisher throughout the youth group's year. This consistency allows for an increased focus on the study itself and not the mechanics of doing the lesson, and lowers the marginal training costs for the instructor.

There are certain months that are peak months and there are some months that are particularly slow for InWord. As discussed earlier many churches work on a quarterly calendar and make purchasing decisions just before the new quarter. August and September are particularly busy months for InWord primarily because of the new school year beginning, which means a new year for church youth groups as well. December appears to be very slow, mainly because of all of the other events happening in the life of a church during that month. There are a couple of months that are affected to a lesser degree than the previous 3 months. January seems to pick up some of the slack for the month of December, as youth leaders now have time to order new Bible studies for the new year. November is slightly above average most likely because November is when materials should be ordered for the

next quarter's needs. Finally June is slightly below normal, mostly because youth groups move away from organized studies for the summer, when attendance fluctuates wildly.

Finally income needs to be considered. As the level of money that youth groups have is higher, relatively speaking, the youth groups should purchase more items, or better items at a higher price. The educational tools that youth groups can use appear to be unaffected by fluctuations in income level.[6] This most likely is happening because youth groups are first spending their money on Bible studies and later spending on more discretionary items such as outings and parties. Since income does not affect sales I have left it out of the model.

This demand model will be estimated using linear regression. From the demand curve I will create a total revenue curve and model profits as a function of price.

For the smaller (less expensive) studies my regression equation is:

$$Q_{SS} = \beta_0 + \beta_1 CP39 + \beta_2 CPMAE + \beta_3 TotalStudies + \beta_4 AugSept + \beta_5 JuneDec$$

where:

Q_{SS} is the total number of smaller studies sold in that month
CP39 is the average price of the smaller studies price adjusted by the CPI
CPMAE is the price adjusted amount spent the previous month on advertising
TotalStudies is the total number of studies offered by InWord
JuneDec is a dummy variable representing the months of June and December
AugSept is a dummy variable representing the months of August and September

For the larger (more expensive) studies my regression equation is:

$$Q_{LS} = \beta_0 + \beta_1 CP49 + \beta_2 CPMAE + \beta_3 TotalStudies + \beta_4 Jan + \beta_5 Aug + \beta_6 Sept + \beta_7 Nov + \beta_8 Dec$$

where:

Q_{LS} is the total number of larger studies sold in that month
CP49 is the average price of the larger studies price adjusted by the CPI
CPMAE is the price adjusted amount spent the previous month on advertising
TotalStudies is the total number of studies offered by InWord

[6] With the limited data available, a GDP variable used as a proxy for church income was never significant even at the 90% level.

Jan is a dummy variable for the month of January
Aug is a dummy variable for the month of August
Sept is a dummy variable for the month of September
Nov is a dummy variable for the month of November
Dec is a dummy variable for the month of December

The reason for the different dummy variables will be explained later in the paper.

III. DATA

Since the founding of InWord, careful records have been kept, tracking which church purchased which study and how much they were charged. Given the limited number of studies, and the limited advertising budget for the first 5 years, InWord's sales were extremely inconsistent. There were times when InWord would sell twenty copies of a particular study one month, and then for the next three months they would not sell any of that particular study. Starting in August of 2000 sales of all studies became more consistent when InWord introduced four new studies and started spending more on advertising. For this reason this paper will only look at data from August of 2000 to the present.

The lack of price changes is the biggest concern addressed in this paper. InWord did, however, offer quantity discounts, and also since InWord did not change prices for the studies, the real prices of their studies have been decreasing. The average price paid in a month was calculated by finding the total revenues for the large and small studies individually. I then divided the revenues from the large studies by the total number of copies sold for the large studies in that month (likewise for the small studies). This number was then divided by the CPI with a base month of August 2000.[7]

The CPMAE variable is the CPI price-adjusted amount of advertising spending by InWord during the previous month. The reason that the advertising spending was lagged one month was because most of the advertising expenditures occurred one month before the

[7] CP49 = AugRev / Aug Q_{SS} / CPI
CP49 = \$2000 / 78 / 1.08 = 23.75

effort was realized. In other words, InWord would buy a full page ad in a magazine, but the magazine would not be distributed until a month later. Without lagging the advertising expenses, and only including advertising spending in the month that it was actually spent, advertising spending was not statistically significant, nor was a two-month lag statistically significant. The reason for the CPI adjustment was to remain consistent using August 2000 dollars, so that a $1000 marketing effort in 2000 would be the same as a $1100 marketing effort in 2005.

IV. RESULTS

Smaller Studies

The regression results for the smaller study sales are shown in Appendix A. The signs for the estimates are as expected; positively related with advertising sales, the number of studies, and with the peak month dummy variables, and negatively related with price and off-season months. The coefficient estimates are all significant at the 95% level of confidence, and the model has an R^2 of 0.644. R^2 indicates that the model explains 64.4% of the observed variation in sales from month to month. The resulting estimated equation is (see appendix A for regression results):

$$Q_{SS} = 52.35 - 2.001\ CP39 + 0.002\ CPMAE + 2.720\ TotalStudies - 14.893\ JuneDec + 30.216\ AugSept$$

The coefficient of -2 on the CPI adjusted average price indicates that for each $1 reduction in the monthly average price (adjusted by the CPI) the number of smaller studies sold will increase by 2 each month on average. The coefficient of 2.720 for the total studies means that for each additional study InWord has in its catalog, on average 2.7 more of the smaller studies will be sold.

The 0.002 on the coefficient for CPI adjusted monthly advertising expenditure indicates that the spending on advertising is making very little difference in the total number of studies being sold. On average for every $1000 in advertising spending only two additional smaller studies are being purchased the following month. Finally as expected

there is seasonality to the sales of InWord's studies. August and September are very large volume months, whereas December and June were very low.

By combining August and September into a single variable, and June and December into another single variable, a heteroskadasticity[8] problem was resolved. The value for the White's test is listed in Appendix A.

The model has a Durbin-Watson statistic of 1.582, above the D-W lower bound of 1.400 (below which indicates the presence of serial correlation) and below the upper bound of 1.722 (above which indicates no serial correlation) so the model is in an indeterminate range where I cannot infer for certain one way or the other. To test further, I ran a regression using the Cochrane-Orcutt method. The coefficients did not change significantly, so I have concluded that serial correlation is not a significant problem in this model.[9]

Multicollinearity occurs when two variables in the model are highly correlated, but does not appear to be a problem in this model. The model does not have an unusually high R^2 along with low t-statistics and all of the signs on the coefficients are what we had expected. Creating a simple bivariate correlation table as shows that the variable as not correlated with each other. There could be some misspecification, when a variable has either been left out, or too many variables are present. I do not have all the data that I would like, and had to leave out competitor's prices, and the cost of complementary items.[10]

The estimated demand curve for the smaller studies is in Appendix C along with the total revenue curve and cost curves. These are explained in greater detail later in the paper.

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[8] Heteroskadasticity is a problem that occurs when the amount of error in a model changes in a consistent way throughout the model. ei. As sales increase the amount of unexplainable errors increase.

[9] Serial correlation means that if the previous month's studies were underestimated by the model, it is likely that the following month's estimates will be underestimated as well. This is bad because all fluctuations in the model should be random and should not follow any certain pattern.

[10] Including GDP as a measure of the economy and as a measure of income was considered, but was never statistically significant therefore left out of the final equation.

Larger Studies

The regression results for the larger studies are located in Appendix B.[11] The signs of the coefficients are as I had predicted, positively related with advertising sales, the number of studies, and peak demand months, and negatively related with price and with the off-season month (December). Most of the coefficients are significant at the 95% level except the total studies which is insignificant, and the model has an R^2 of 0.993. The resulting equation is (see appendix B for regression results):

$Q_{LS} = 53.077 - 1.207\ CP49 + 0.003\ CPMAE + 1.004\ TotalStudies + 14.127\ Jan + 55.285$

$Aug + 31.975\ Sept + 29.139\ Nov - 12.396\ Dec$

The coefficient of -1.207 for the average monthly price indicates that a $1 decrease in the price of the larger studies should only increase sales by 1.2 units. As with the smaller studies, advertising has little direct impact on sales. In this case the impact is an average of three studies sold for each $1000 in advertising.

The 1.004 coefficient indicates that as InWord adds an additional study, on average they will sell an extra copy of a larger study. Sales of the large studies are very high in August and above average in January, September, and November, and December is again well below average. Again, this is because of the seasonality of the biblical studies market.

This model initially suffered from severe heteroskadasticity, and in order to correct for it, I used the weighted least squares approach. The original model had a White's test statistic of 29.627 with a critical value of only 23.68. After correcting the model, which had previously indicated the presence of heteroskadasticity, the White's test statistic fell below the critical value and is reported in Appendix B.

[11] There are two regression results and their corresponding White's test for heteroskadasticity. The first is the non-WLS fixed regression, showing the heteroskadasticity, the second being the weighted least square heteroskadasticity fixed regression and its corresponding White's test.

The final model has a D-W statistic 1.740 which is above the lower bound of 1.31 and below the upper bound of 1.82. To test further I ran a regression using the Cochrane-Orcutt method. The coefficients did not change significantly, so I have concluded that serial correlation is not a problem in this model.

Demand and Revenue Curves

The estimated demand curve and its corresponding total revenue curve are illustrated in appendixes C and D. Different levels of advertising, numbers of studies, and the month of the year will affect the exact position of the demand curve. For simplification purposes I took the average monthly spending on advertising ($2500)[12] and the current number of studies (20) as constant, and plotted the demand and revenue curves for non-abnormal months (typical months in the seasonal cycle). By doing this I created a typical demand curve for any given month. Given this demand I plotted the total revenue curve by taking different prices and multiplying those prices by the corresponding quantity demanded at that price level.

As mentioned in the introduction, variable costs are a flat $10.91 per study, and fixed costs are $9750.[13] Since sales of both types of studies bring in about the same amount of revenue, and since equal amounts of resources are devoted to each type of study, I just charged the fixed costs equally between the two studies. The total cost (TC) and variable cost (VC) curves are shown on the graphs in appendixes C and D. Since each study costs $10.91 to produce the variable cost curve is simply the quantity sold times the $10.91 cost of production. If InWord can find less expensive materials from which to make the studies, or

[12] $2500 is the average amount spent on advertising per month over the past 3 years. This amount can be changed, but since it does not vary with sales it will be treated as a fixed cost.
[13] Of the $9750 in fixed costs, $2500 is advertising spending.

buy in greater quantities to receive greater quantity discounts, the VC curve can actually become less steep, and InWord may increase profit. The total cost curve is the combination of fixed costs and variable costs.

Both the smaller and larger studies demand curves can be shifted outward (to the right) through better marketing which influences customer's taste preferences, or by better meeting consumer preferences, and through external events such as a change in the price of a key competitor. Changing prices do nothing to shift the demand curve, changing prices will only change the quantity demanded. By raising prices the quantity demanded would fall and by lowering prices the quantity demanded will rise.

When the demand curve is shifted outward (to the right) the quantity demanded at all price levels will be higher. This means that more studies will be sold without having to lower the price of the study. This also means that the revenue curve will arch upward as well as become wider. This gives InWord a better chance to recoup some of its expenses through higher revenues.

Smaller Studies

The smaller studies are priced very close to their CPI adjusted profit maximizing average price of $33 (or $37 in 2005 dollars), which is close to the current price of $39 (Appendix E). Over the next few years the CPI should rise to meet the optimal level of output, so at this point it may not be wise to change the price of the smaller studies.

To bring the average price down from $39 to $37 InWord should continue to offer quantity discounts to churches who buy more than one copy. Currently each additional copy is priced at $19. My suggestion would be to charge $39 for the first study, $29 for the next four, and $19 for each study after that. By offer then next four copies of a study at $29 the

average price will fall less rapidly than if they continue to charge $19, and InWord should be able to keep their average price near the $37 target.

If InWord only charges one price and offers no price breaks their operating profit would be about $1000 per month. When using my suggested price discrimination regime, InWord could achieve operating profits over $1600 (Appendix F). Even though operating profits would increase to over $1600, it is only a small portion of the fixed costs of almost $5000 per month.[14]

Larger Studies

The larger studies are not priced closely enough to their optimal price level for me to suggest that InWord keep the $49 price for the larger studies (Appendix E). The profit maximizing real price of the larger studies is $38.86, which is $42.74 in 2005 dollars and currently InWord is charging $49. The profit maximizing price is the average price that InWord should be selling its studies. Like the smaller studies, InWord should offer quantity discounts. If InWord offers the first study at $49, the next four at $34, and all studies thereafter at $19. Since InWord is looking for an average of $42.74, the quantity discounts should allow this to happen. InWord could realize operating profits of over $1500 rather than $1000 if InWord does not price discriminate (Appendix F).

[14] These are just estimates based upon previous sales, but since these prices have not been charged, it is difficult to say for certain that this will happen.

V. CONCLUSIONS AND SUGGESTIONS

When I started this project it appeared to me from a non-scientific observation of other Bible studies in the market that InWord's prices were set much higher than other Bible studies, and the high prices were causing churches not to buy the studies. The prices InWord does charge are well above average, but given InWord's current cost structure the prices appear to be appropriate. Based upon the research done it appears to be a lack of demand, potentially caused by a marketing problem that is causing InWord to lose money month after month.

Operational Changes

As mentioned earlier the price on the larger studies could be reduced, but it may not make that much of a difference. It would be wise to have a higher middle tier of pricing for purchases of additional copies of a study rather than automatically moving to the $19 price point. There does appear to be enough demand for that strategy to work.

InWord needs to focus on either increasing demand for their studies or on decreasing costs. The best alternative to reducing costs would be to spend advertising money on advertising that at least pays for itself. Secondly since demand is seasonal, InWord could only bring in extra staff during peak months, or have the staff only work part time most of the year except during peak months. By reducing advertising spending the TC line would actually shift downward, closer to the total revenue curve (appendixes C and D).

Based upon the nature of the Bible study market, it appears that most studies are very heavily subsidized by churches and denominations. Firms that produce Bible studies are then

able to discount their studies almost to operating cost. If this indeed is the case, then it could be that InWord may never be able to charge a high enough price to break even without the help of donors.

Marketing Changes

The first thing InWord should do is a market survey. It is important to find out exactly what the public likes about InWord's studies and what they should change. InWord could take some of the advertising budget and spend it on this survey. InWord could find out whether the layout of the studies is awkward, or whether the number of lessons in each study is too great for most youth groups.

At this point, InWord has positioned itself as a high price, reproducible, in-depth study, and most other studies are inexpensive, take little preparation outside of class time, and don't require the youth group to fill in worksheets. InWord has put itself in a very unique marketing mix position in which there do not appear to be many competitors. It could mean that others have tried and failed, or that others had better market data that suggested that that market segment is not profitable, or they just haven't tried it, but InWord appears to have differentiated itself fully.

InWord could move away from their current marketing position and increase their product mix. If InWord created workbooks for the youth to complete rather than requiring the youth leaders to make enough copies for all of their students, many of the larger churches could see this as a major convenience and would be willing to buy them. This could increase revenue for InWord, as well as potentially decreasing costs through quantity discounts.

It does appear that the smaller studies are selling better than the larger studies, and most of InWord's competitors sell shorter studies than InWord's smaller studies. There may

be a market for selling even smaller studies than InWord is currently producing. These studies could be offered at a lower price point, and churches would not feel locked into a long-term study. InWord has four consecutive studies just on the book of Acts alone comprising a total of 26 weeks of lessons. It would take half the year (and almost half the school year) just to move through one book.

Most important, however, is to increase the effectiveness of the marketing campaign. This is unfortunately outside of the scope of this paper, but it does seem clear that the advertising money currently being spent is not affecting demand in any appreciable way. I cannot rule out that paying for advertisements does not impact this market much, but InWord's case the best form of advertisement appears to be word-of-mouth. In this case it would be important to find and target a few influential church leaders and have them endorse the InWord studies.

These suggestions are designed to increase demand. Shifting the demand curve to the right may occur if leaders of large denominations agree to endorse the studies. This could be a source of low-cost advertising and InWord could point to that endorsement by the denomination as a selling point to those churches. InWord could have its studies listed in the catalogs of the major denominations, and this would increase name recognition far greater than what is currently being achieved.

It is possible for InWord to affect its demand curve, but to do so it must do something much more radical than their current marketing efforts. In the short term, InWord would be best-suited to try and lower costs wherever possible, until it can create an effective marketing campaign.

APPENDICIES

Appendix A

Smaller Studies

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.802[a]	.644	.606	17.760	1.582

a. Predictors: (Constant), augsept, CP39, JuneDec, CPMAE, totalstudies

b. Dependent Variable: sold39

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27342.660	5	5468.532	17.337	.000[a]
	Residual	15140.673	48	315.431		
	Total	42483.333	53			

a. Predictors: (Constant), augsept, CP39, JuneDec, CPMAE, totalstudies

b. Dependent Variable: sold39

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	52.350	33.702		1.553	.127
	totalstudies	2.720	1.144	.230	2.377	.022
	CPMAE	.002	.001	.326	3.451	.001
	CP39	-2.001	.679	-.277	-2.947	.005
	JuneDec	-14.893	6.750	-.198	-2.207	.032
	augsept	30.216	6.807	.418	4.439	.000

a. Dependent Variable: sold39

Smaller Studies White's Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.549[a]	.302	.119	401.41117	2.128

a. Predictors: (Constant), ts_sq, JuneDec, augsept, CPMAE2, CP39, CP39_CPMAE, CP39_ts, CPMAE_ts, CP392, totalstudies, CPMAE

b. Dependent Variable: res5

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2925504	11	265954.900	1.651	.120[a]
	Residual	6767499	42	161130.928		
	Total	9693003	53			

a. Predictors: (Constant), ts_sq, JuneDec, augsept, CPMAE2, CP39, CP39_CPMA CP39_ts, CPMAE_ts, CP392, totalstudies, CPMAE

b. Dependent Variable: res5

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4257.942	9129.780		.466	.643
	totalstudies	-120.692	603.015	-.676	-.200	.842
	CPMAE	-.675	.358	-6.974	-1.883	.067
	CP39	-86.057	340.542	-.788	-.253	.802
	JuneDec	-189.223	162.534	-.166	-1.164	.251
	augsept	229.745	160.965	.211	1.427	.161
	CPMAE_ts	.024	.011	4.623	2.260	.029
	CPMAE2	-3.5E-006	.000	-.856	-2.020	.050
	CP392	-.731	3.547	-.416	-.206	.838
	CP39_CPMAE	.009	.008	3.082	1.162	.252
	CP39_ts	4.872	9.666	.919	.504	.617
	ts_sq	-3.756	13.343	-.641	-.281	.780

a. Dependent Variable: res5

Critical Chi-Squared (11) (95%) = 19.68
N=54 R Squared = .302 White's Test = 16.31

Appendix B

Larger Studies

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.867[a]	.752	.706	16.172	1.381

a. Predictors: (Constant), CPMAE, Aug, Nov, CP49, Jan, Dec, totalstudies, Sept

b. Dependent Variable: sold49

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34806.677	8	4350.835	16.635	.000[a]
	Residual	11507.851	44	261.542		
	Total	46314.528	52			

a. Predictors: (Constant), CPMAE, Aug, Nov, CP49, Jan, Dec, totalstudies, Sept

b. Dependent Variable: sold49

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	73.998	25.295		2.925	.005
	Jan	13.357	7.932	.132	1.684	.099
	Dec	-17.888	8.461	-.177	-2.114	.040
	Aug	42.958	7.911	.425	5.430	.000
	Sept	42.443	8.731	.420	4.861	.000
	Nov	22.780	7.911	.225	2.879	.006
	totalstudies	1.485	1.048	.118	1.416	.164
	CP49	-1.891	.365	-.441	-5.183	.000
	CPMAE	.002	.001	.316	3.551	.001

a. Dependent Variable: sold49

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.94	135.67	39.09	25.872	53
Residual	-30.075	46.418	.000	14.876	53
Std. Predicted Value	-1.475	3.733	.000	1.000	53
Std. Residual	-1.860	2.870	.000	.920	53

a. Dependent Variable: sold49

Larger studies White's test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.748[a]	.559	.396	284.19222	2.025

a. Predictors: (Constant), ts_sq, Sept, Nov, Dec, Jan, Aug, CP49, CPMAE2, CP49_CPMAE, CP49_ts, CPMAE_ts, CP492, totalstudies, CPMAE

b. Dependent Variable: res1

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3887765	14	277697.532	3.438	.001[a]
	Residual	3069078	38	80765.218		
	Total	6956844	52			

a. Predictors: (Constant), ts_sq, Sept, Nov, Dec, Jan, Aug, CP49, CPMAE2, CP49 CPMAE, CP49_ts, CPMAE_ts, CP492, totalstudies, CPMAE

b. Dependent Variable: res1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1343.041	3519.430		-.382	.705
	Jan	-139.314	144.638	-.112	-.963	.342
	Dec	-153.162	197.942	-.124	-.774	.444
	Aug	211.242	151.340	.170	1.396	.171
	Sept	296.491	160.472	.239	1.848	.072
	Nov	-76.921	140.550	-.062	-.547	.587
	totalstudies	520.160	327.276	3.359	1.589	.120
	CP49	-145.819	92.386	-2.774	-1.578	.123
	CPMAE	-.016	.240	-.195	-.067	.947
	CP49_ts	-5.963	3.131	-1.843	-1.905	.064
	CP49_CPMAE	.002	.004	.896	.516	.609
	CP492	3.015	.842	4.247	3.580	.001
	CPMAE_ts	-.002	.008	-.465	-.249	.805
	CPMAE2	-1.2E-006	.000	-.342	-.878	.385
	ts_sq	-8.241	9.097	-1.624	-.906	.371

a. Dependent Variable: res1

Critical Chi-Squared (14) (95%) = 23.68
N=53 R Squared = .559 White's test = 29.627

Larger studies Final

Model Summary[b,c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.997[a]	.993	.992	1.450	1.740

a. Predictors: (Constant), CPMAE, Aug, Nov, Dec, Jan, CP49, totalstudies, Sept

b. Dependent Variable: sold49

c. Weighted Least Squares Regression - Weighted by h

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13482.489	8	1685.311	801.503	.000[a]
	Residual	92.518	44	2.103		
	Total	13575.008	52			

a. Predictors: (Constant), CPMAE, Aug, Nov, Dec, Jan, CP49, totalstudies, Sept

b. Dependent Variable: sold49

c. Weighted Least Squares Regression - Weighted by h

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	53.077	19.223		2.761	.008
	Jan	14.127	3.679	.054	3.840	.000
	Dec	-12.356	4.971	-.038	-2.485	.017
	Aug	55.285	8.146	.089	6.787	.000
	Sept	31.975	10.328	.283	3.096	.003
	Nov	29.139	6.450	.058	4.517	.000
	totalstudies	1.004	.748	.034	1.342	.186
	CP49	-1.207	.301	-.090	-4.010	.000
	CPMAE	.003	.000	.647	6.693	.000

a. Dependent Variable: sold49

b. Weighted Least Squares Regression - Weighted by h

Final larger studies White's test

Model Summary[b,c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.647[a]	.419	.244	29.23403	2.069

a. Predictors: (Constant), ts_sq, Aug, Dec, Nov, Jan, CP49_ts, Sept, CP492, CP49_CPMAE, CPMAE2, CP49, totalstudies

b. Dependent Variable: res2

c. Weighted Least Squares Regression - Weighted by h

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24611.978	12	2050.998	2.400	.019[a]
	Residual	34185.150	40	854.629		
	Total	58797.128	52			

a. Predictors: (Constant), ts_sq, Aug, Dec, Nov, Jan, CP49_ts, Sept, CP492, CP49_ CPMAE, CPMAE2, CP49, totalstudies

b. Dependent Variable: res2

c. Weighted Least Squares Regression - Weighted by h

Coefficients[a,b]

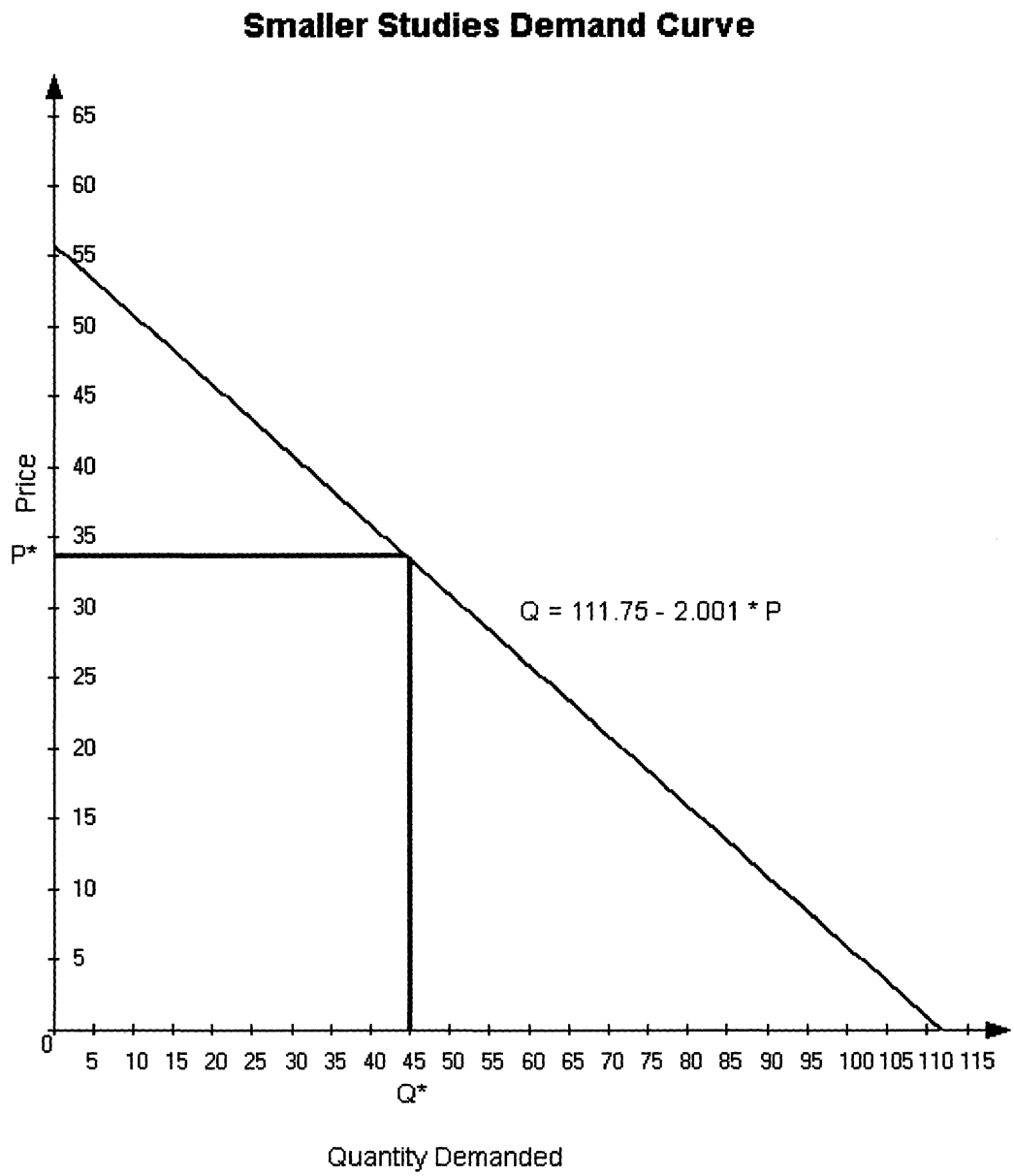
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	187.226	2749.150		.068	.946
	Jan	-26.323	79.139	-.048	-.333	.741
	Dec	-216.012	113.474	-.323	-1.904	.064
	Aug	203.137	167.675	.156	1.211	.233
	Sept	388.420	228.232	1.651	1.702	.097
	Nov	-27.705	130.780	-.027	-.212	.833
	totalstudies	240.421	286.608	3.856	.839	.407
	CP49	-104.737	75.585	-3.760	-1.386	.174
	CP49_ts	-4.293	2.497	-1.881	-1.720	.093
	CP49_CPMAE	.001	.001	3.779	1.538	.132
	CP492	2.064	.928	5.941	2.225	.032
	CPMAE2	-1.9E-006	.000	-6.323	-2.408	.021
	ts_sq	-1.504	7.521	-.791	-.200	.843

a. Dependent Variable: res2

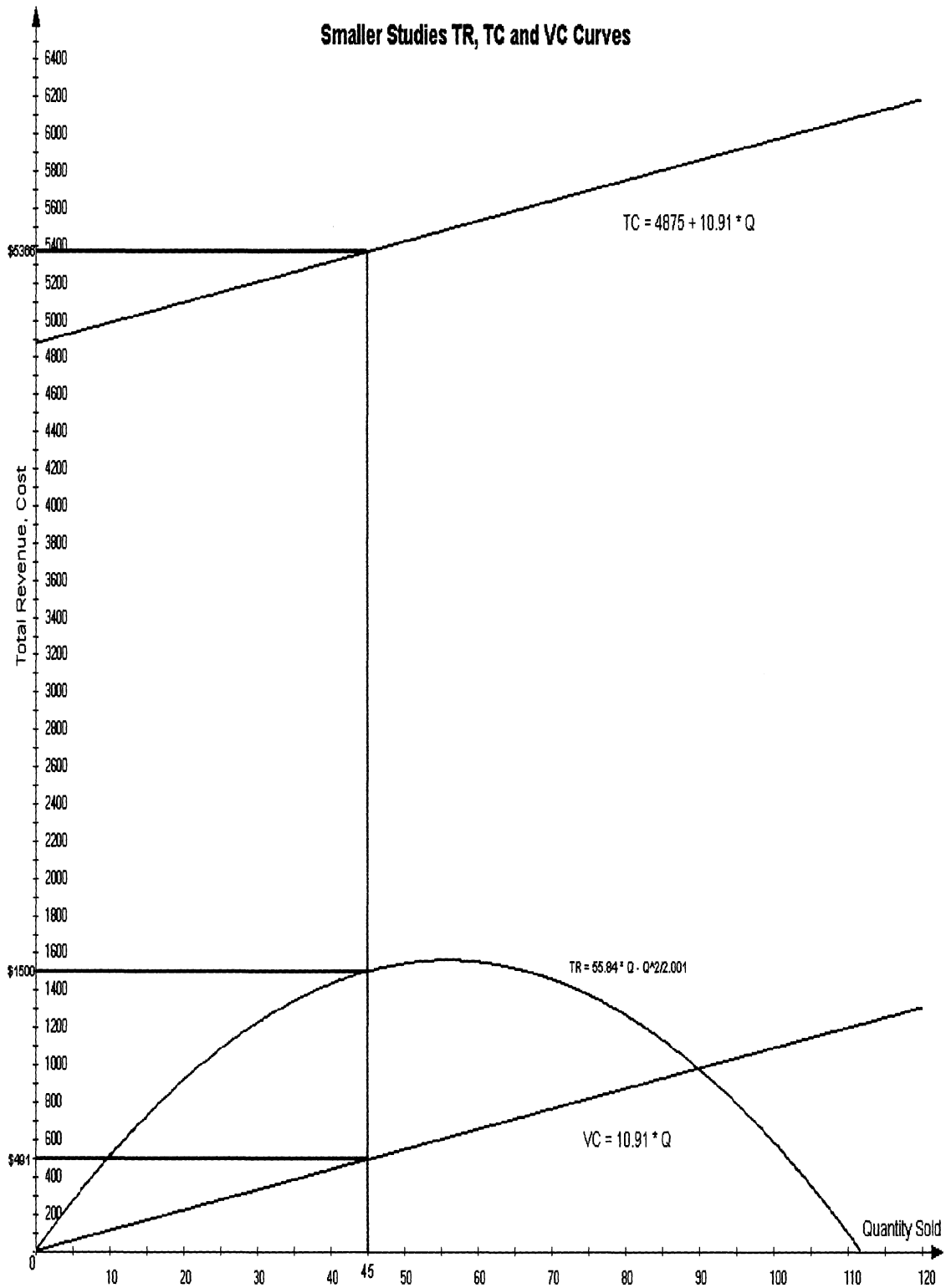
b. Weighted Least Squares Regression - Weighted by h

Critical Chi-Squared (14) (95%) = 23.68
N=53 R Squared = .419 White's test = 22.207

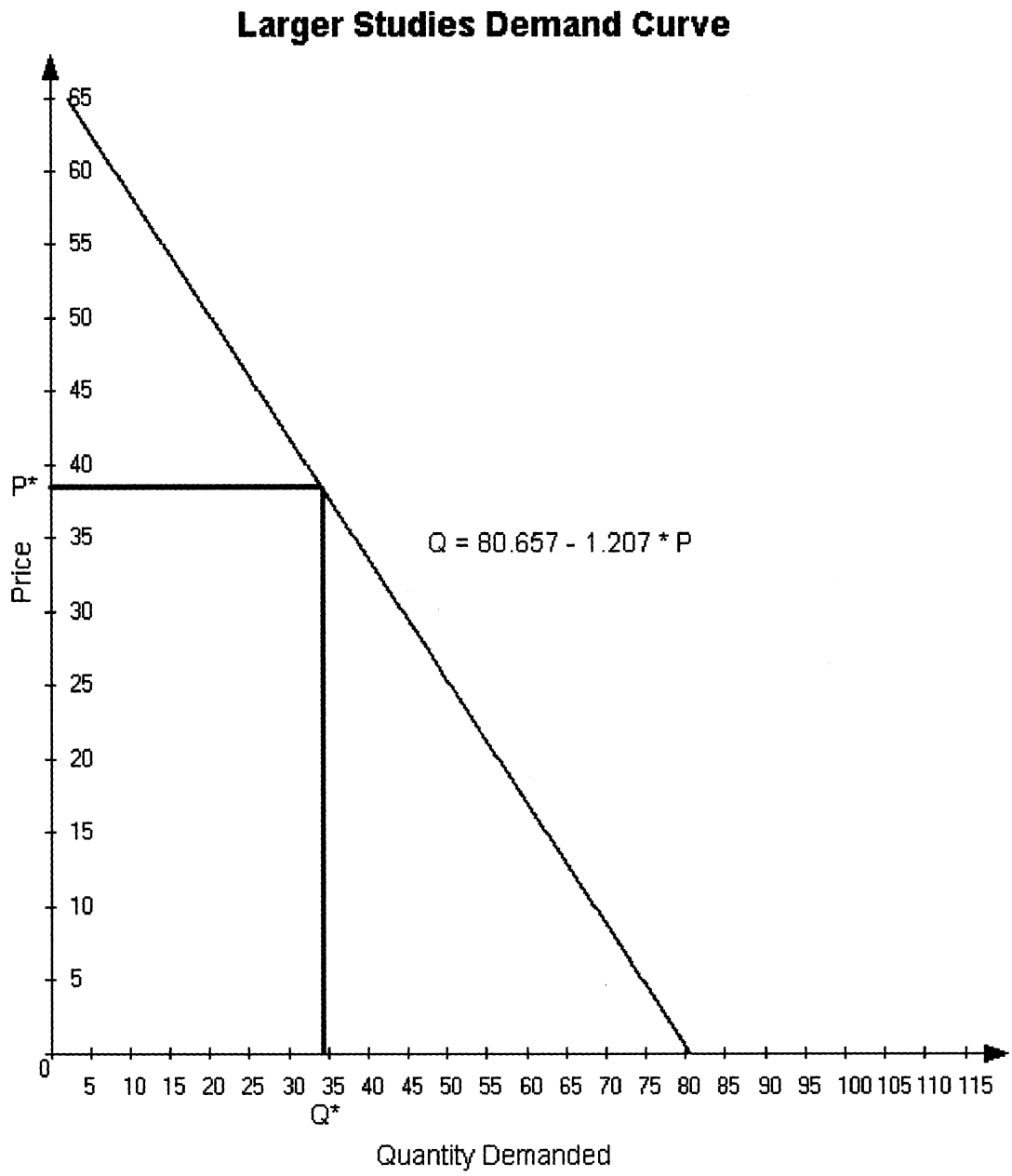
Appendix C



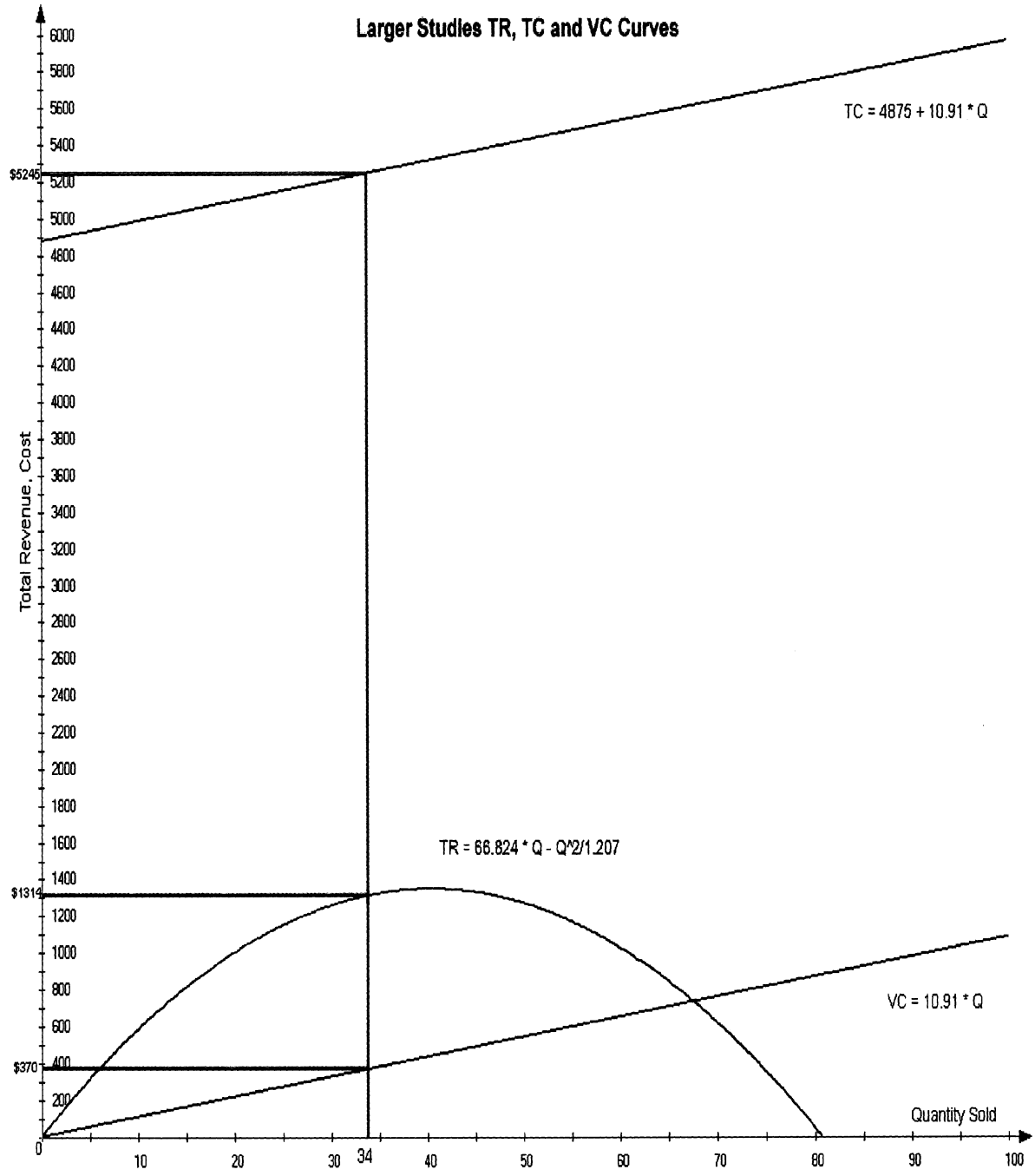
Assuming 20 studies available and $2500 spent on advertising.


Smaller Studies TR, TC and VC Curves
TC = 4875 + 10.91 * Q
TR = 55.84 * Q - Q^2/2.001
VC = 10.91 * Q
$5366
$1500
$491
Total Revenue, Cost
Quantity Sold
0
45
6400
6200
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
10
20
30
40
50
60
70
80
90
100
110
120

Appendix D



Assuming 20 studies available and $2500 spent on advertising.


Larger Studies TR, TC and VC Curves
TC = 4875 + 10.91 * Q
TR = 66.824 * Q - Q^2/1.207
VC = 10.91 * Q
Total Revenue, Cost
Quantity Sold
$5245
$1314
$370
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
10
20
30
34
40
50
60
70
80
90
100

Appendix E

Smaller Studies Profit Maximization

$\Pi = TR - TC$

$\Pi = 55.84Q - Q^2/2.001 - (10.91Q + 4875)$

$\delta\Pi/\delta Q = 55.84 - 2Q/2.001 - 10.91$

$.999Q = 44.93$

$Q = 44.95 \qquad P = \$33.37$

$Q \approx 45 \qquad P \approx \$33$

Current CPI adjusted price[15] = \$39/1.126[16]=\$34.64

Larger Studies Profit Maximization

$\Pi = TR - TC$

$\Pi = 66.824Q - Q^2/1.207 - (10.91Q + 4875)$

$\delta\Pi/\delta Q = 66.824 - 2Q/1.207 - 10.91$

$1.657Q = 55.914$

$Q = 33.744 \qquad P = \$38.86$

$Q \approx 34 \qquad P \approx \$38.65$

Current CPI adjusted price[17] = \$49/1.126[18]=\$43.52

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[15] ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt
[16] The percentage rise in the CPI from August 2000 through April 2005
[17] ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt
[18] The percentage rise in the CPI from August 2000 through April 2005

Appendix F

Smaller studies price discrimination

Nominal prices of $39 for first study, $29 for next 4, and $19 for each study thereafter

Q1 P Rev

D = 111.75 – 2.001 ($39/1.126) = 42.44 * $39 = $1655

Q2 Q1 P Rev

D = 111.75 – 2.001 ($29/1.126) = (60.21 - 42.44) * $29 = $515

Q3 Q2 P Rev

D = 111.75 – 2.001 ($19/1.126) = (78 – 60.21) * $19 = $337

Operating Π = Rev – VC

Operating Π = 2507 – (78 * 10.91) = $1656

Larger studies price discrimination

Nominal prices of $49 for first study, $34 for next 4, and $19 for each study thereafter

Q1 P Rev

D = 80.657 – 1.207 ($49/1.126) = 28.13 * $49 = $1378

Q2 Q1 P Rev

D = 80.657 – 1.207 ($34/1.126) = (44.21 – 28.13) * $34 = $546

Q3 Q2 P Rev

D = 80.657 – 1.207 ($19/1.126) = (60.29 – 44.21) * $19 = $305

Operating Π = Rev – VC

Operating Π = 2229 – (60 * 10.91) = $1575

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